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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,553	11/28/2003	Hajime Nakagawa	FS-F03214-01	8306

37398 7590 10/14/2005

TAIYO CORPORATION  
401 HOLLAND LANE  
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ALEXANDRIA, VA 22314

EXAMINER
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CHEA, THORL

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/722,553

Applicant(s)

NAKAGAWA ET AL.

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 07062005; 08242005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fukui et al (Pub.No.: US 2002/0102502) and The Hackh's Chemical Dictionary, Fourth Edition.

Fukui et al disclose a photothermographic material substantially as claimed. See the SBR latex on page 33, [0360], [0362] wherein the -Bu- in the polymer chain is 26.5; on page 16, [0144], [0145], page 17, [0147] to [0175]; the average particle diameter of the latex is from 1 nm to 50,000 nm, preferably 5 nm to 1,000 nm in column 16, [0143]; the silver behenate as silver salt of an organic acid on page 35, [0393], [0396] and on page 12, [0086]; the Tg of binder is from 20 °C to 70 °C on page 19, [0132]; the reducing agent and development accelerator in the abstract and page 2, formula (II) and formula (I). The Hackh's Chemical Dictionary defines the term "butadiene" as "Bivynyl. Bromo-\* Bromoprene. Chloro-\* Chloroprene. Methyl-\* Isoprene". See page 116 of The Hackh's Chemical Dictionary, Fourth Edition. Fukui discloses a photothermographic having polymer latex having butadiene monomer with percentage and glass temperature same to that claimed, but fails to disclose that the butadiene unit wherein R01 and R02 are never both hydrogen such as presented in the claimed

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invention. However, it has been known in the chemical art such as disclosed in The Hackh's Chemical Dictionary, Fourth Edition that the term "butadiene" encompasses the scope of the butadiene that the conjugate carbon atom can be substituted with a group other than hydrogen atom. Accordingly, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the polymer latex containing the butadiene group taught in Fukui et al including the use of the butadiene moiety having a substituents known in the The Hackh's Chemical Dictionary, Fourth Edition with a reasonable expectation of achieving a binder with good quality such as providing the material development uniformity and rapid image form, and thereby provide an invention as claimed. Moreover, Closely related homologs, analogs, isomers in chemistry may create a prima facie case of obviousness. In re Dillon 16 USPQ 2d 1897, 1904 (Fed. Cir. 1990); In re Payne 203 USPQ 245 (CCPA 1979); in re Mills 126 USPQ 513 (CCPA 1960); In re Henze 85 USPQ 261 (CCPA 1950); In re Hass 60 USPQ 544 (CCPA 1944). In this the use of the butadiene copolymer having a substituent or a hydrogen associated with the conjugate carbon chain would have been found prima facie obvious to the worker of ordinary skill in the art. The size of the particle size of 30 to nm is within the scope of particle taught in Fukui et al. The halogen ions in claim 15 is related to the impurity associated with the latex formation and would be considered as inherent to the process for forming the latex taught in Fukui et al.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fukui et al (Pub.No.: US 2002/0102502) and The Hackh's Chemical Dictionary, Fourth Edition as applied to claims 1, 3-15 above, and further in view of either Ezoe et al (US Patent No. 6,331,386) or Goto (US Patent No. 6,156,491) or Ohzeki (US 2002/0197570 A1) . The

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hydrazine compound of formula in claim 2 has been known as contrast enhancing agent and taught in Goto in column 37, formula (H), Ezoe et al in column 37, formula (H) and Ohzeki page 21, second column, formula (D). It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the hydrazine compound known Ezoe et al (US Patent No. 6,331,386) or Goto (US Patent No. 6,156,491) or Ohzeki (US 2002/0197570 A1) in the material obtained by the combination of Fukui et al (Pub.No.: US 2002/0102502) and The Hackh's Chemical Dictionary, Fourth Edition to improve its image contrast, and thereby provide a material as claimed.

5. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fukui et al (Pub.No.: US 2002/0102502); The Hackh's Chemical Dictionary, Fourth and Encyclopedia of Chemical Technology, Fourth Edition, Volume 15, John Willey & Sons, pp. 34-52 (John Willey & Sons).

Fukui et al disclose a photothermographic material substantially as claimed. See the SBR latex on page 33, [0360], [0362] wherein the -Bu- in the polymer chain is 26.5; on page 16, [0144], [0145], page 17, [0147] to [0175]; the average particle diameter of the latex is from 1 nm to 50,000 nm, preferably 5 nm to 1,000 nm in column 16, [0143]; the silver behenate as silver salt of an organic acid on page 35, [0393], [0396] and on page 12, [0086]; the Tg of binder is from 20 °C to 70 °C on page 19, [0132]; the reducing agent and development accelerator in the abstract and page 2, formula (II) and formula (I). The Hackh's Chemical Dictionary defines the term "butadiene" as "Bivynyl. Bromo-\* Bromoprene. Chloro-\* Chloroprene. Methyl-\* Isoprene". See page 116 of The Hackh's Chemical Dictionary, Fourth Edition. John Willey &

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Sons on page 41, fifth paragraph, discloses the use of water-soluble initiator including peroxide in the process for forming polymer latex.

Fukui discloses a polymer latex having butadiene monomer with percentage and glass temperature same to that claimed in the present claimed invention, but fails to disclose that the butadiene unit wherein R01 and R02 are never both hydrogen such as presented in the claimed invention. However, it has been known in the chemical art such as disclosed in The Hackh's Chemical Dictionary, Fourth Edition that the term "butadiene" encompasses the scope of the butadiene that the conjugate carbon atom can be substituted with a group other than hydrogen atoms, and John Willey & Sons, the use of hydrogen peroxide in the process for forming polymer latex. Accordingly, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the polymer latex containing the butadiene group taught in Fukui et al including the use of the butadiene moiety having a substituents known in the Hackh's Chemical Dictionary, Fourth Edition with a reasonable expectation of achieving a binder with good quality such as providing the material development uniformity and rapid image form, and thereby provide an invention as claimed. Moreover, Closely related homologs, analogs, isomers in chemistry may create a prima facie case of obviousness. In re Dillon 16 USPQ 2d 1897, 1904 (Fed. Cir. 1990); In re Payne 203 USPQ 245 (CCPA 1979); in re Mills 126 USPQ 513 (CCPA 1960); In re Henze 85 USPQ 261 (CCPA 1950); In re Hass 60 USPQ 544 (CCPA 1944). In this the use of the butadiene copolymer having a substituent or a hydrogen associated with the conjugate carbon chain would have been found prima facie obvious to the worker of ordinary skill in the art. The peroxide as polymerization initiator is taught in John Willey & Sons, and the use thereof in the

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polymerization of polymer latex would have been found prima facie obvious. Moreover, the halogen ions in claim 17, 21 is related to the impurity associated with the latex formation and would be considered as inherent to the process for forming the latex taught in Fukui et al.

6. The Terminal Disclaimer submitted on May 20, 2005 obviates the rejection under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/724,706 (Pub. US 2004/0121273) in view of Fukui et al (US 2001/010250). Therefore, the rejection is withdrawn.

#### ***Response to Arguments***

7. Applicant's arguments filed May 24, 2005 have been fully considered but they are not persuasive for the reason set forth in the above rejection.

#### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR


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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tchea   
September 29, 2005

  
Thorl Chea  
Primary Examiner  
Art Unit 1752